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ABSTRACT

It has been demonstrated that effective use of "wait time" (up to three seconds) in teacher-student interchanges can result in spontaneous improvement in both cognitive and affective variables in the classroom. These changes are enhanced if information concerning wait time durations is supplemented by supportive interventions from persons who have studied tape recordings of teachers' interactions in the classroom. A 4-week study was conducted in which 10 teachers participated in workshops and evaluations of teacher behavior. Results are given in the following areas: (1) wait time; (2) percent of talk by students; (3) percent of higher level questions; (4) length of contributions by students; and (5) Piagetian operational level. Monitoring wait times using an electronic device accompanied by skilled analyses of tape recordings and supportive intervention provide an avenue to the improvement of teaching skills. A 12-item reference list concludes the document. (JD)

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Supportive Intervention as a Vehicle for Faculty Development

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Paper presented at the Annual Convention of the Eastern Educational Research Association, Virginia Beach, VA, February, 1985

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Supportive Intervention as a Vehicle for Faculty Development

Recent articles on professional development have called attention to the problem of teacher isolation. The typical teacher, though surrounded by students for most of the day, is cut off from professional contacts with coworkers. The teacher does not generally have opportunities for observing other teachers or for discussing professional concerns.

The importance of professional dialogue is clear. Rosenholtz and Kyle (1984) state that without it, "...teachers have no avenues for using their limited time together to share ideas, discuss teaching problems and possible solutions, and in turn, develop better teaching skills. Without professional dialogue, teachers skill acquisition and development is ironically banished to an off-campus location" (p.12). Because of this problem Rosenholtz and Kyle believe that teacher professional development is not maximally utilized and the ultimate price is paid in reduced student learning.

Harvey (1982) has reported that, although the concept of teacher support groups is well accepted as an antidote for the problems of isolation, their implementation is haphazard and difficult to develop and maintain. Our research has led to the creation of a model for teacher intellectual support and professional development. We refer to the process as supportive intervention. It can be implemented in a school setting without disrupting the school day. The process is described below.

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The Supportive Intervention Procedure

In a recent study of classroom interaction behaviors (Swift & Gooding, 1983), a new method implementing support for teachers into the daily teaching schedule was developed.

From a group of 40 teachers who had participated in a semester length study of wait time, 12 teachers were contacted and asked to participate in a new study. Eleven agreed; the first 10 were accepted. Of these, three were in the comparison group of the original study, one had used a set of instructional guides emphasizing effective discussion techniques, and six had used wait time feedback devices (Wait Timer TM) designed to slow the pace of dialogue

In the first phase, the teachers participated in a two-and one-half hour workshop in which a transcript containing short wait times was reenacted and contrasted with one having longer wait times. From the reenactments and other data, the teachers reached the conclusion that waiting 3 seconds between student and teacher interaction produced higher cognitive levels of discourse. They also concluded that students gave longer relevant answers and had increased opportunities to engage in dialogue with teachers and classmates. Furthermore, evidence was provided to the teachers showing that increasing their wait times following questions and answers produced no difference with respect to discipline in the classroom, a point about which they had expressed concern. Several specific strategies for engendering true discussions were presented. Finally, each teacher was provided with an electronic device which would supply an immediate indication of successful pausing to a 3 second

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criterion following questions and answers. This time length was based on research conducted by Rowe (1974a, 1974b) which indicated that a 3 second pause was the minimum to permit adequate thinking time for both teachers and students.

The next phase of the project made use of the supportive intervention process. This was defined as a procedure in which teacher moves that approximated improved discussion strategies were noted during evaluations of tape recorded lessons. In this procedure the study team listened to recordings in a classroom interaction laboratory rather than conducting analyses in the presence of the teachers. Notes were taken which emphasized teaching successes and suggested avenues for further professional growth. Behavior that was negative or contradictory was ignored in the comments prepared for sharing with the teachers. The term "criticism" with its negative implications of failure, was carefully avoided. Reinforcement was given for successful approximations of the 3 second wait times, operation at higher cognitive levels of thinking, and utilization of student interaction.

The duration of the study was limited to four weeks, whereas the previous project had extended throughout a full academic semester. Consultation with individuals during planning time on each Monday provided opportunities for supportive intervention and discussion of teaching successes. This procedure, summarized in Figure 1, could be extended and repeated as often as deemed necessary by the participants. Three supportive sessions were provided in this study.

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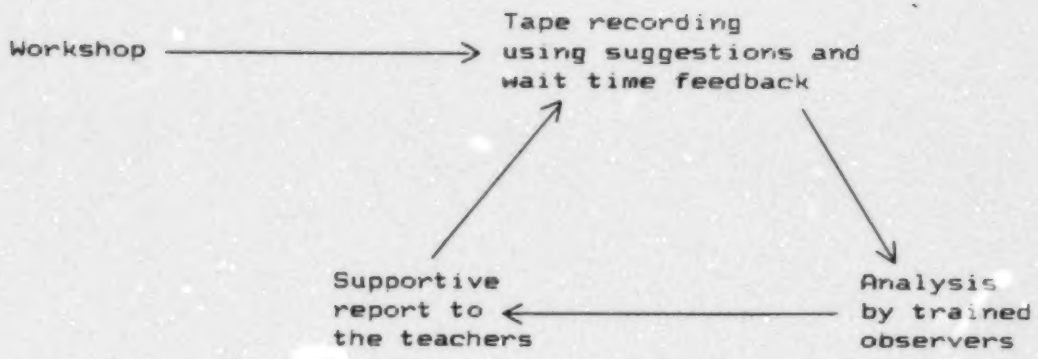
Workshop
Tape recording using suggestions and wait time feedback
Analysis by trained observers
Supportive report to the teachers

Figure 1. The supportive intervention process. The participants can become the trained observers in this model.

Results

The effectiveness of the wait time feedback devices in increasing pauses during classroom discussions was demonstrated in a semester-long investigation (Swift & Gooding, 1983). These changes are illustrated in Figure 2, along with baseline data and the results obtained by using supportive intervention and wait time feedback together. As indicated by the middle bar in Figure 2, the presence of the Wait Timers helped both teachers and students increase the duration of their pauses. Spontaneous changes in other parameters accompanied these longer wait times. The lower bars in Figure 2 represent the changes that were obtained when teachers received wait time feedback and were encouraged by supportive intervention. All results were significant beyond the .01 level. Some comments on each of the variables follow:

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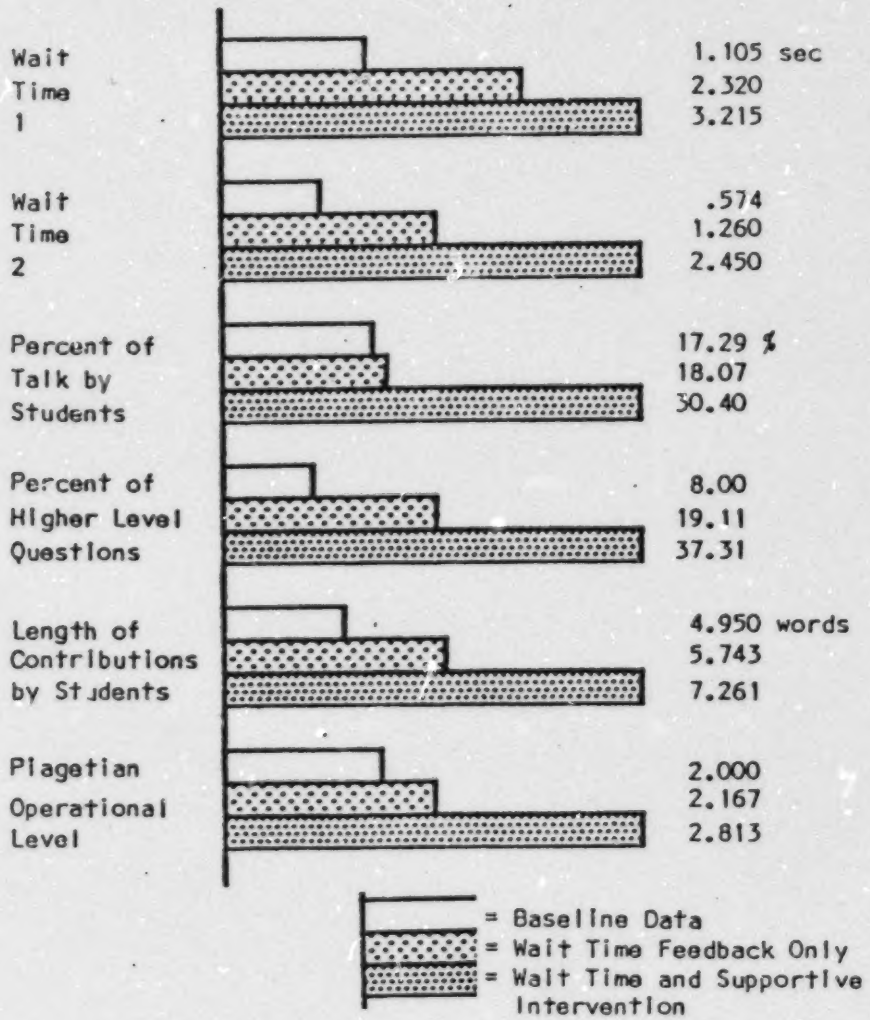

Figure 2. Changes in several of the measured variables

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Wait time 1 and 2. Students were quick to take advantage of the thinking time that was permitted. Teachers, habituated and pressured to hurry, were less able to be patient. However, with the help of Wait Timers and supportive intervention, their pauses averaged 2.45 seconds, a value that appears to be adequate to stimulate beneficial effects.

Percent of talk by students. The teachers still were dominant during discussions but, by drawing attention to higher level and/or divergent questions, the percentage of time that students were talking about topics relevant to the lessons nearly doubled over the baseline data.

Percent of higher level questions. Asking questions at higher cognitive levels is one of the most important consequences of using longer wait times. From the baseline of only 8% the proportion increased to 19% with wait time feedback. After the workshop that examined the importance of adequate wait times and the techniques of supportive intervention, this proportion increased to 23%. Following supportive intervention sessions, about 42% of the questions were classified as above the recall, identification, association, or reformulation levels. These changes were brought about without instruction in questioning skills.

Length of contributions by students. Word counts, which excluded stammering and pause fillers such as "uh", revealed that the short replies of middle school students became longer, another indication of higher cognitive level processing.

Piagetian operational level. Doerr (1984) classified the Piagetian level of each discussion using four categories: early

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concrete (1), fully concrete (2), late concrete - transitional (3), and fully formal (4). Although no mention was made of Piaget during the workshop and supportive intervention phase of our study, the level that teachers used moved toward the formal stage of development.

All of the teachers in the sample expressed a high degree of satisfaction with the manner in which supportive intervention was provided. The teachers improved their skills while maintaining positive self-images. Throughout the intervention period, they exhibited enthusiasm toward professional growth and, at the conclusion, stated that they would miss having the valuable input which had been provided by the analysis team. They expressed interest in continuing the techniques on their own.

In sum, the authors have determined that effective use of wait time can result in spontaneous improvements in both cognitive and affective variables in the classroom. These changes are enhanced if information concerning wait time durations is supplemented by supportive intervention from persons who have studied tape recordings of interaction from the teachers' classrooms. In an era of low teacher turnover and an aging teacher population, methods that effectively improve the skills of inservice teachers are of vital importance. These could also prove to be important tools in the training of preservice teachers. Thus, it appears that monitoring wait times using an electronic device accompanied by skilled analyses of tape recordings and supportive intervention do indeed provide an avenue to the improvement of teaching skills. Further studies

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that provide direct measures of the effect of improved classroom interaction on student achievement are needed.

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Patricia R. Swift teaches courses in values clarification at SUNY, Oswego, conducts workshops, and does question analysis in the Classroom Interaction Research Project.

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